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(54) **BREAKAWAY CHAIN**
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(51) **Int. Cl.**
F16G 13/14 (2006.01)
E01F 13/04 (2006.01)

(57) **ABSTRACT**

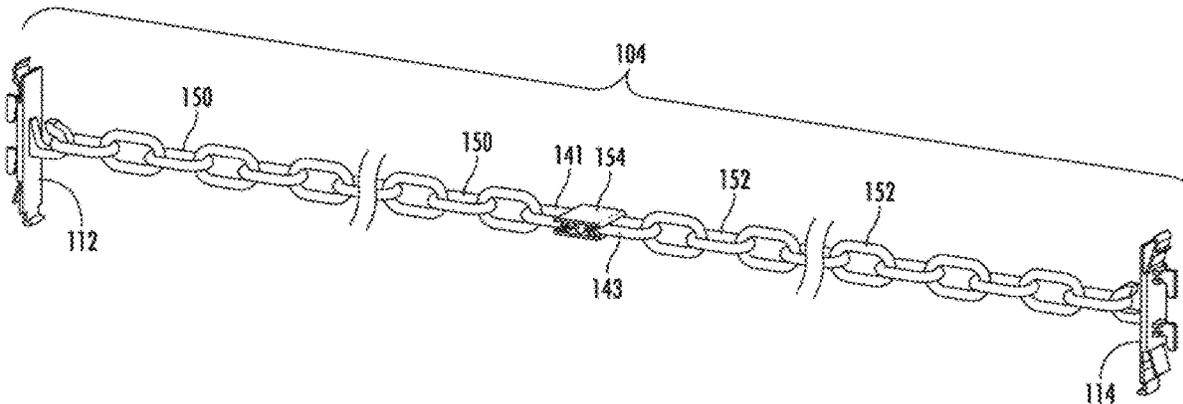
(52) **U.S. Cl.**
CPC **F16G 13/14** (2013.01); **E01F 13/04** (2013.01)

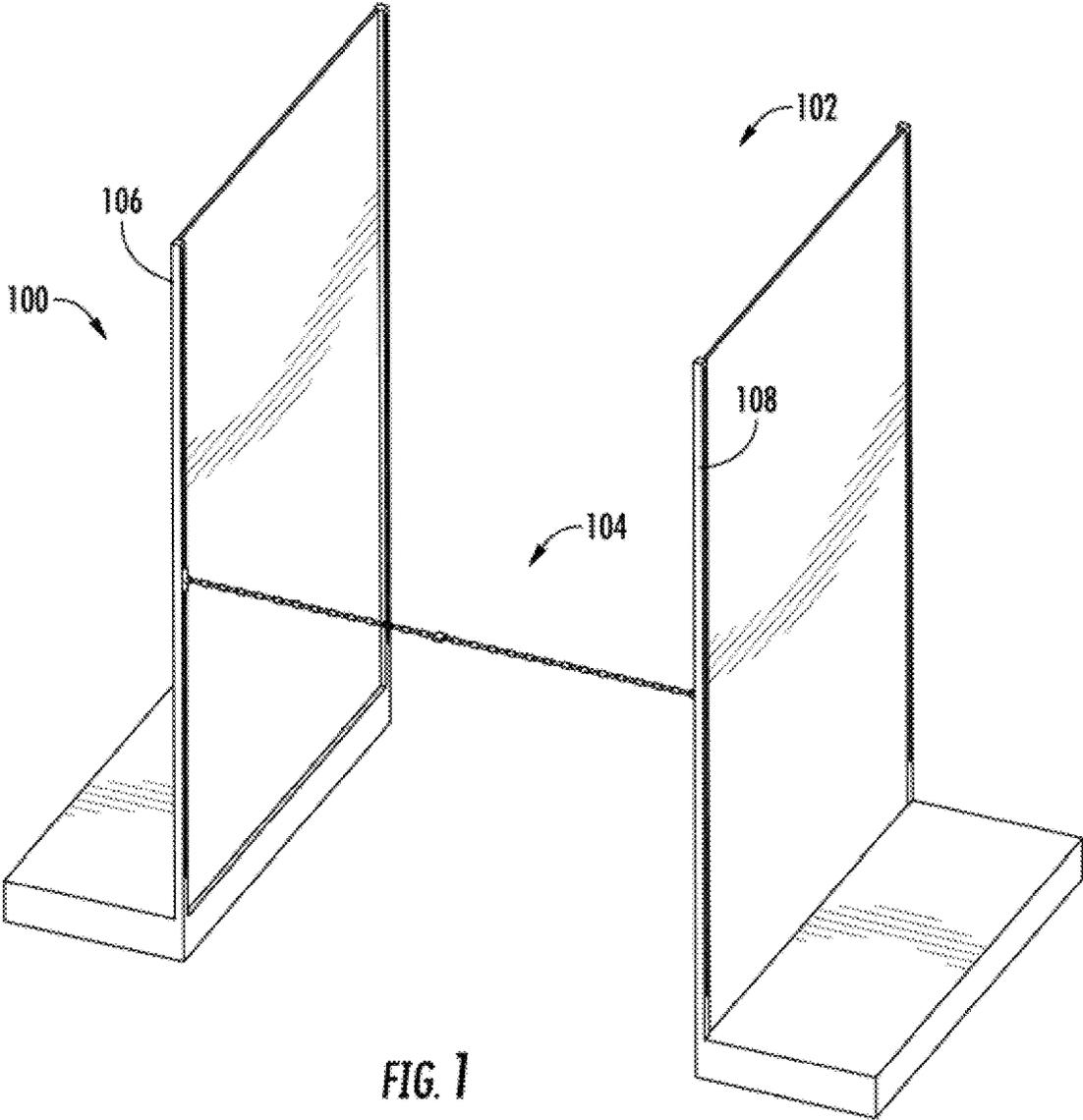
A breakaway chain having a breakaway connector and first and second chain portions is provided. The breakaway connector includes a first opening is defined between a first wall portion and a second wall portion spaced away from the first wall portion. A first flexible gripping member extends from the first wall portion towards the second wall portion. A second opening is defined between a third wall portion and a fourth wall portion spaced away from the third wall portion. A second flexible gripping member extends from the third wall portion towards the fourth wall portion. The first chain portion has a first chain link. The first chain link inserts into the first opening and engages the first flexible gripping member. The second chain portion has a second chain link. The second chain link inserts into the first opening and engages the second flexible gripping member.

(58) **Field of Classification Search**
CPC F16G 13/14; F16G 15/04; E01F 13/04; E01F 13/028; Y10T 24/3902; Y10T 24/3904
USPC 59/84, 90
See application file for complete search history.

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23 Claims, 8 Drawing Sheets





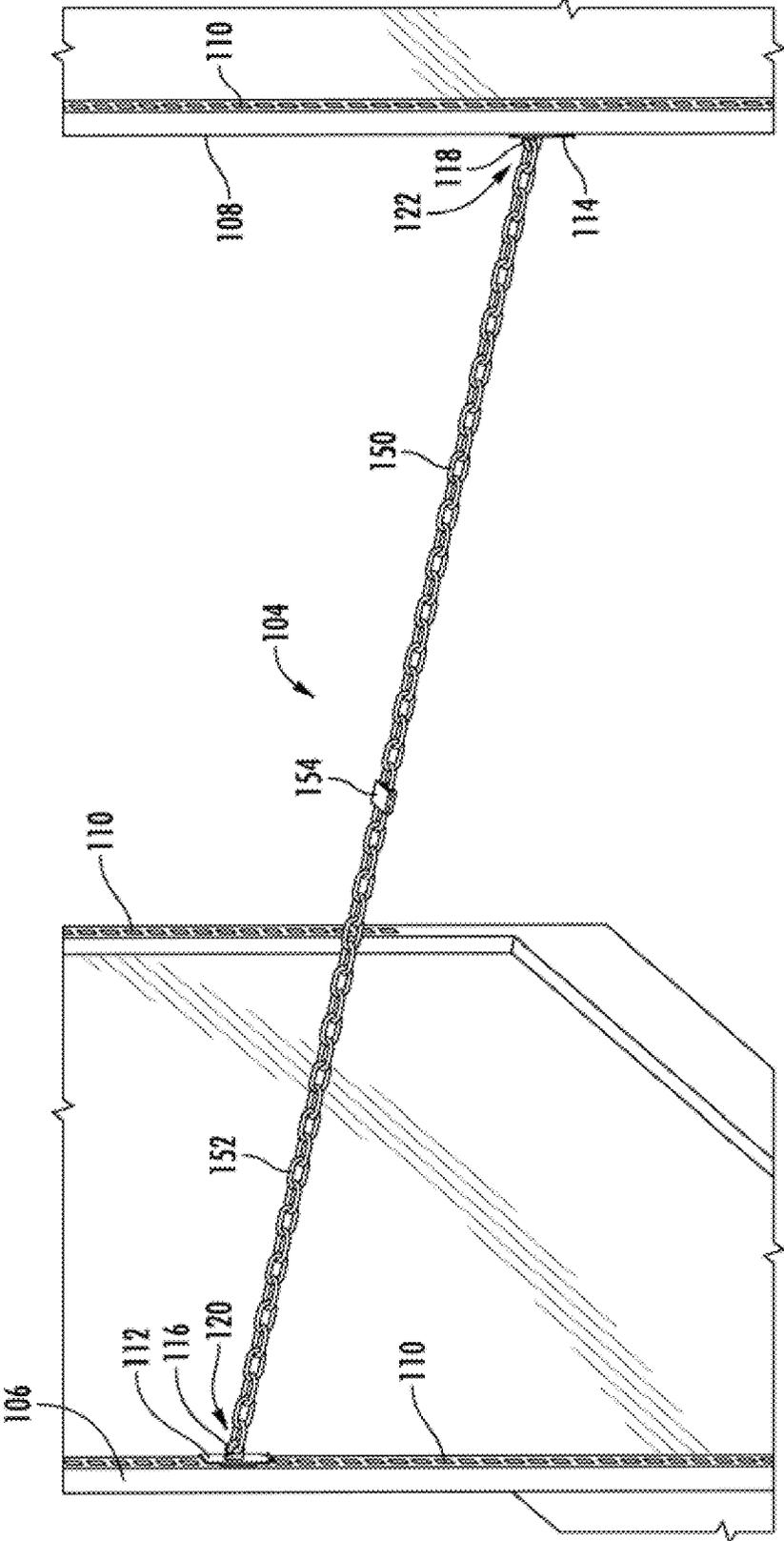


FIG. 2

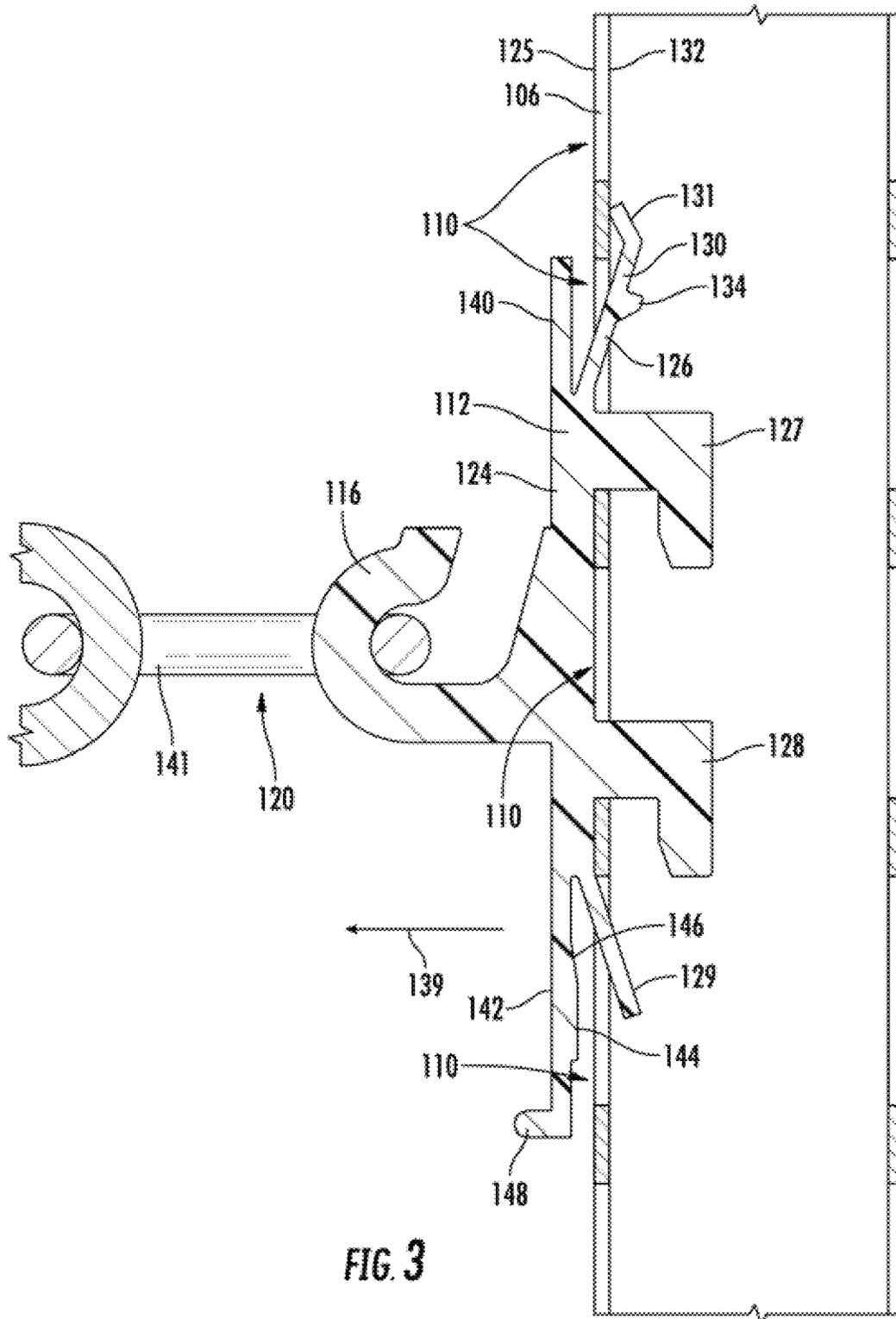


FIG. 3

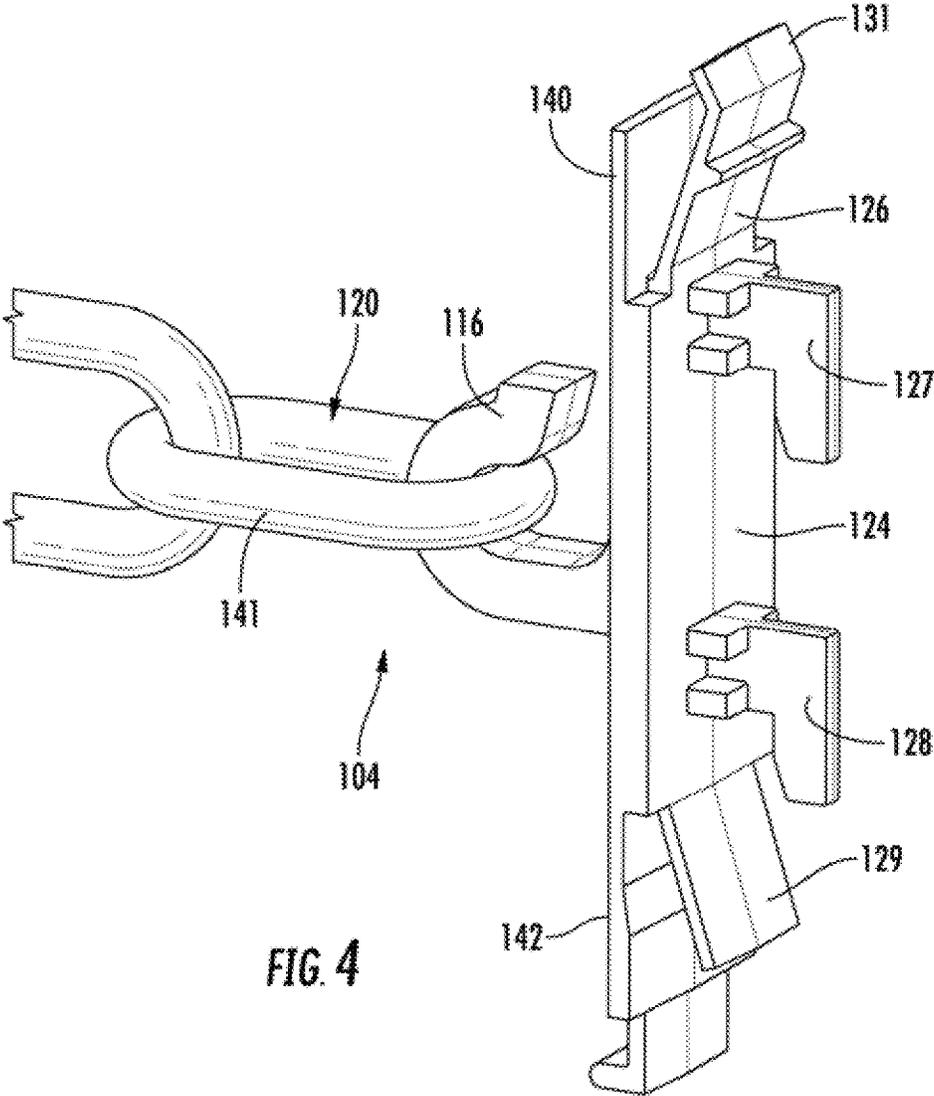


FIG. 4

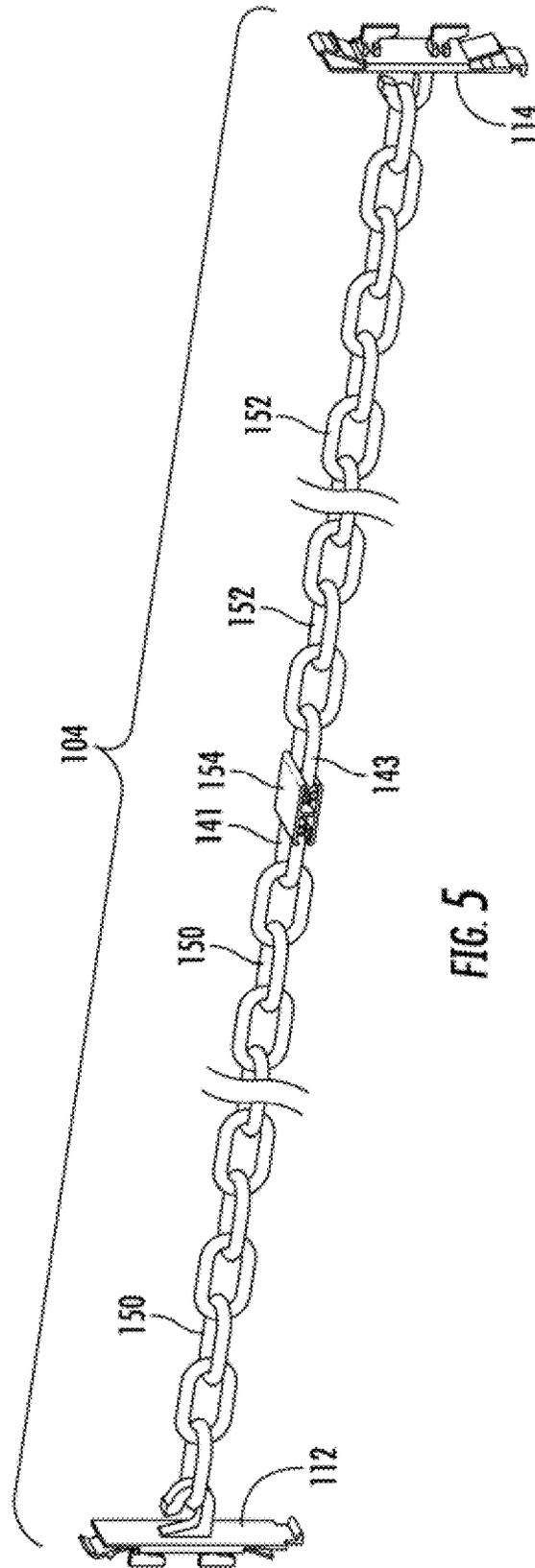


FIG. 5

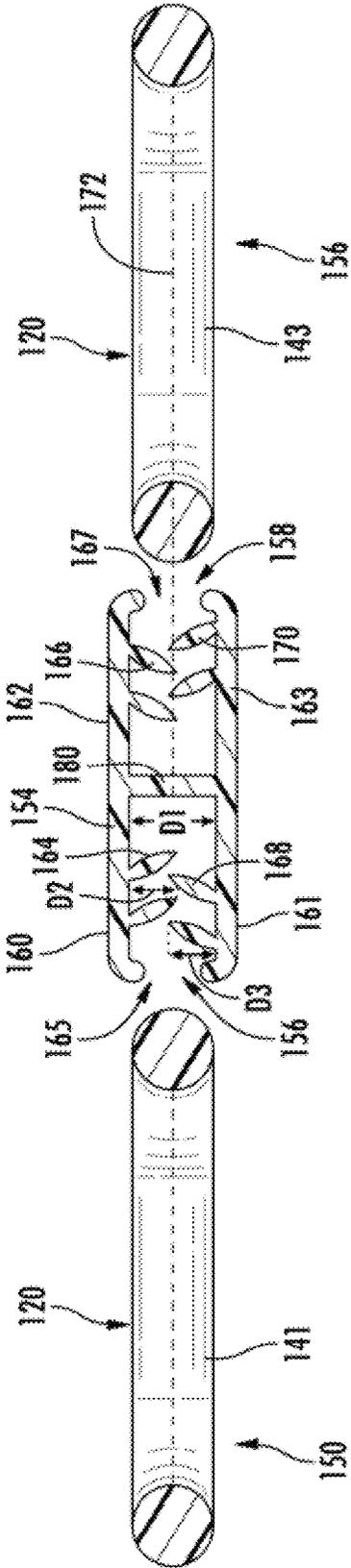


FIG. 6

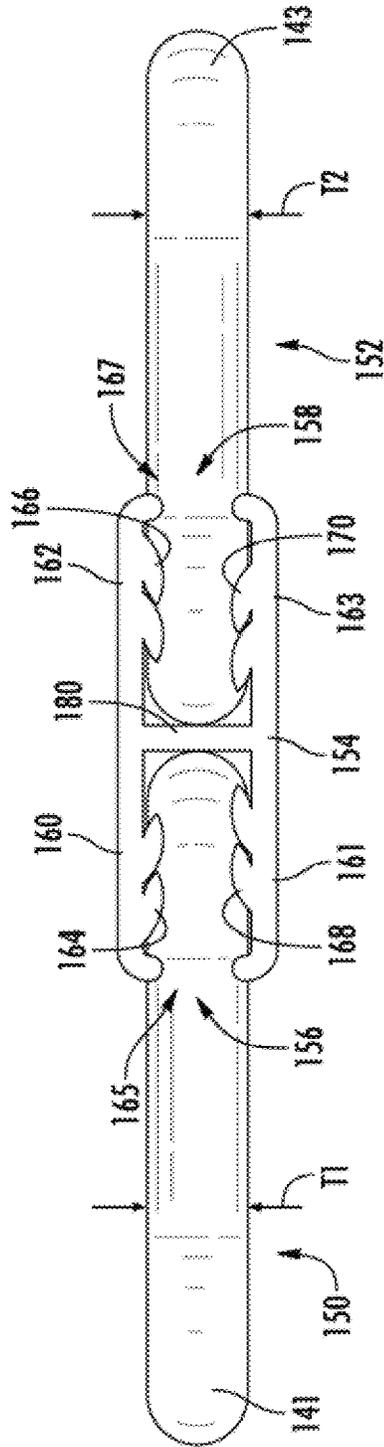


FIG. 7

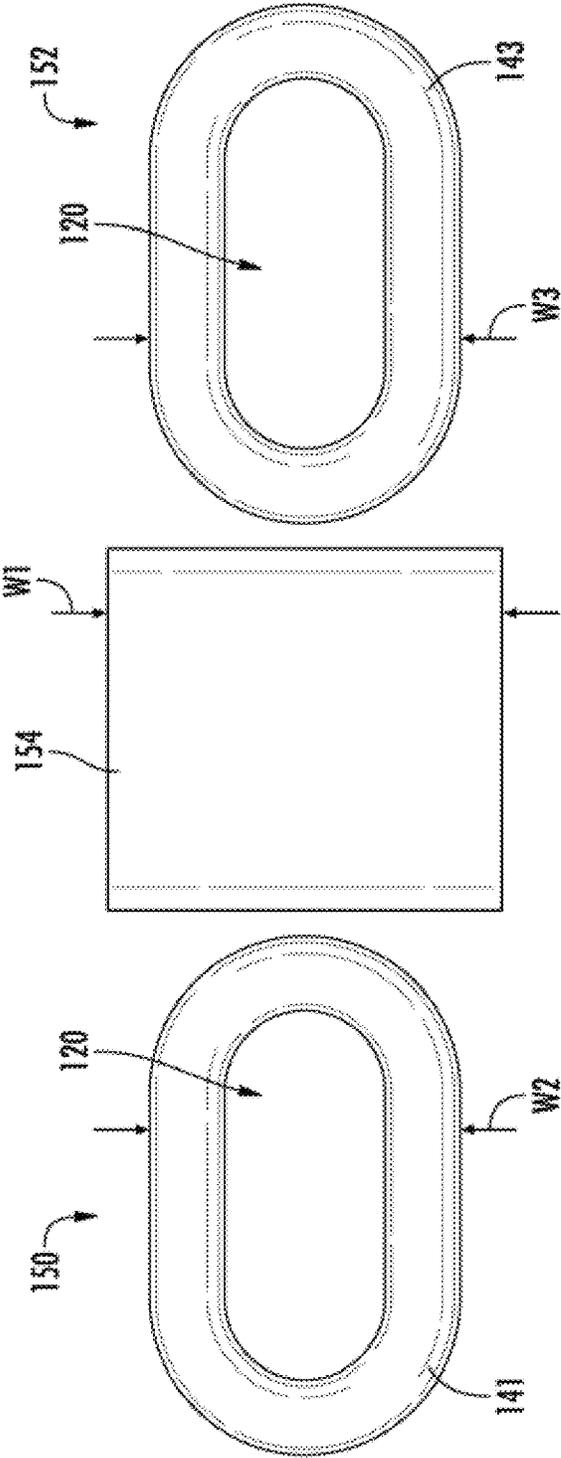


FIG. 8

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BREAKAWAY CHAIN

FIELD OF THE INVENTION

This invention generally relates to a barrier for blocking a walkway in a retail environment.

BACKGROUND OF THE INVENTION

Preventing patrons in a retail environment from accessing or walking through particular portions of the retail environment is common. For example, doors can be locked, cones can be positioned in front of the off-limit locations, signs can be located next to the area.

Retail environments often have multiple checkout lines that have walkways therebetween. At times, not all checkout lines are in service. To avoid theft, checkout lines that are not in service typically have a blocking member such as a chain that extends across the walkway and that prevents patrons from passing through the walkway.

Typically, the chain can be disconnected from one end or the other such that a person may pass through the walkway if necessary, such as if they are a store worker or in the event of an emergency.

Unfortunately, in an emergency, there may not be time to unhook the chain from the structure to which it is attached. As such, it is desirable to provide a blocking member that need not be unhooked from the support structure but that allows a person to still pass through the walkway or blocking member if necessary. It is also desirable to have a blocking member that can be reused if a person passes through the blocking member without disconnecting it from the support structure.

Examples of the present disclosure provide improvements over the current state of the art.

BRIEF SUMMARY OF THE INVENTION

A new and improved blocking member is provided.

In an example of a blocking member, a breakaway chain having a breakaway connector and first and second chain portions is provided. The breakaway connector includes a first opening and a second opening. The first opening is defined between a first wall portion and a second wall portion spaced away from the first wall portion. A first flexible gripping member extends from the first wall portion towards the second wall portion. The second opening is defined between a third wall portion and a fourth wall portion spaced away from the third wall portion. A second flexible gripping member extends from the third wall portion towards the fourth wall portion. The first chain portion has a first chain link. The first chain link inserts into the first opening and engages the first flexible gripping member. The second chain portion has a second chain link. The second chain link inserts into the first opening and engages the second flexible gripping member.

In one example, the engagement between the first chain link and the breakaway connector is not greater than 5 lbs. such that the application of a force greater than 5 lbs. will cause the first chain link to be removed from the breakaway connector.

In one example, the first flexible gripping member is one of a plurality of first flexible gripping members. Each first gripping member of the plurality of first gripping members extends from the first wall portion towards the second wall portion.

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In one example, the first chain link is inserted into the first opening through a first mouth of the first opening. The second chain link is inserted into the second opening through a second mouth of the second opening. The first and second mouths face away from one another.

In one example, a portion of the first chain link extends out of the first opening in a first direction. A portion of the second chain link extends out of the second opening in a second direction opposite the first direction. This can occur when the first and second chain links are fully inserted into the corresponding first and second opening.

In one example, the plurality of first flexible gripping members are axially spaced apart in a direction extending towards the second opening. The plurality of second flexible gripping members are axially spaced apart in a direction extending towards the first opening.

In one example, if either the first or second chain links is removed from the breakaway connector, the first or second chain link removed from the breakaway connector can be reinstalled into the corresponding first or second opening by axially sliding the first or second chain link into the opening and without latching the first or second opening to the breakaway connector.

For instance, no portion of the first or second chain link or the breakaway connector need be manually manipulated by the user to allow for insertion of the first or second chain link into the breakaway connector.

In one example, if either the first or second chain links is removed from the breakaway connector, when the first or second chain link is reinserted into the breakaway connector, the gripping force between the first or second chain link and the breakaway connector is at least 90% of the gripping force prior to the first or second chain link being removed from the breakaway connector. As such, the breakaway connector may be reused.

In one example, the first flexible gripping member extends away from the first wall portion at an angle and away from a mouth of the first opening towards the second opening. The second flexible gripping member extends away from the first wall portion at an angle and away from a mouth of the second opening towards the first opening.

In one example, insertion of the first chain link into the first opening bends the first flexible gripping member towards the second opening and towards the first wall portion. Insertion of the second chain link into the second opening bends the second flexible gripping member towards the first opening and towards the third wall portion.

In one example, insertion of the first chain link into the first opening resiliently bends the first flexible gripping member towards the second opening and towards the first wall portion such that if the first chain link is removed from the first opening, the first flexible gripping member resiliently bends back towards the second wall portion. Insertion of the second chain link into the second opening resiliently bends the second flexible gripping member towards the first opening and towards the third wall portion such that if the second chain link is removed from the second opening, the second flexible gripping member resiliently bends back towards the fourth wall portion.

In one example, the first mouth has a first width and the first chain link has a second width, the first width being equal to or greater than the second width.

In one example, a first hook member is provided that has a hook portion configured to extend through a loop of a link member of the first chain link. A second hook member has a hook portion configured to extend through a loop of a link member of the second chain link.

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In one example, the first hook member has a first mount for mounting the first hook member to an opening in a first upright member. The second hook member has a second mount for mounting the second hook member to an opening in a second upright member.

In one example, the first, second, third and fourth wall portions are unitarily formed in a single body. The first and third wall portions are aligned in a back-to-back relationship. The second and fourth wall portions are aligned in a back-to-back relationship. A fifth wall portion extends transverse between the first and second wall portions and extends transverse between the third and fourth wall portions.

In one example, the fifth wall portion separates the first opening from the second opening.

In one example, a free end of the first wall portion is curved towards the second wall portion. A free end of the second wall portion is curved towards the first wall portion. A free end of the third wall portion is curved towards the fourth wall portion. A free end of the fourth wall portion is curved towards the third wall portion.

In one example, the free end of the first wall portion extends towards the second wall portion to a lesser extent than the first flexible gripping member. The free end of the third wall portion extends towards the fourth wall portion to a lesser extent than the second flexible gripping member.

In one example, in a relaxed state, the first flexible gripping member extends from the first wall portion towards the second wall portion a first distance that is greater than a second distance between the first and second wall portions. A third flexible gripping member extends from the second wall towards the first wall portion. In a relaxed state, the third flexible gripping member extends from the second wall portion towards the first wall portion a third distance that is greater than the second distance between the first and second wall portions.

In one example, a third flexible gripping member extends from the second wall towards the first wall portion. The third flexible gripping member is offset from the first flexible gripping member such that the third flexible gripping member is positioned axially closer to the second opening than the first flexible gripping member.

In an example, a blocking arrangement for a walkway within a retail establishment is provided. The blocking arrangement includes first and second upright members. The second upright member is spaced apart from the first upright member such that the first and second upright members are on opposite sides of the walkway. The blocking arrangement includes a breakaway chain as outlined above. The first chain portion has an end operably secured to the first upright member. The second chain portion has an end operably secured to the second upright member. When the first chain portion is operably secured to the first upright member, the second chain portion is operably secured to the second upright member, and the breakaway connector is engaged with the first and second chain links, the breakaway chain blocks the walkway.

In one example, a first hook member has a hook portion configured to extend through a loop of a link member of the first chain portion. The first hook member is attached to the first upright member and secures the first chain portion to the first upright member. A second hook member has a hook portion configured to extend through a loop of a link member of the second chain portion. The second hook member is attached to the second upright member and secures the second chain portion to the second upright member.

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In one example, the first hook member has a first mount for mounting the first hook member to an opening in the first upright member. The second hook member has a second mount for mounting the second hook member to an opening in the second upright member.

In one example, the first upright member has a plurality of vertically spaced openings. The opening in the first upright member is one of the plurality of vertically spaced openings. The second upright member has a plurality of vertically spaced openings. The opening in the second upright member is one of the plurality of vertically spaced openings.

In one example, the engagement between the first chain link and the breakaway connector is less than the operable securement between the first upright member and the first chain portion. The engagement between the second chain link and the breakaway connector is less than the operable securement between the second upright member and the second chain portion.

Other aspects, objectives and advantages of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings incorporated in and forming a part of the specification illustrate several aspects of the present invention and, together with the description, serve to explain the principles of the invention. In the drawings:

FIG. 1 is a schematic image of a walkway that could be found at a retail environment such as a checkout line that includes a blocking arrangement;

FIG. 2 is an enlarged image of the walkway of FIG. 1;

FIG. 3 is a cross-sectional illustration illustrating a hook member mounting one end of a breakaway chain of the blocking arrangement of FIG. 1 with the hook member mounted to an upright;

FIG. 4 is a perspective view of the end of the breakaway chain and the hook member;

FIG. 5 is a fragmented illustration of the breakaway chain and the hook members for securing the breakaway chain to opposes support structures such as uprights of FIG. 1;

FIG. 6 is a cross-sectional illustration of a portion of the breakaway chain of FIG. 1 with the chain portions disengaged from the breakaway connector thereof;

FIG. 7 is a side view illustration of a portion of the breakaway chain with chain portions engaged with the breakaway connector of the breakaway chain; and

FIG. 8 is a top view illustration of portions of the breakaway chain and a breakaway connector disengaged from one another.

While the invention will be described in connection with certain preferred embodiments, there is no intent to limit it to those embodiments. On the contrary, the intent is to cover all alternatives, modifications and equivalents as included within the spirit and scope of the invention as defined by the appended claims.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 illustrates a blocking arrangement **100** installed to block a walkway **102**. In some instances, the walkway **102** will be within a retail establishment. In particular, the walkway **102** may be provided as part of a checkout lane within the retail establishment.

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In this example, the blocking arrangement **100** includes a breakaway chain **104** that is operably secured to and extends through a pair of uprights **106, 108**.

Each upright **106, 108** has a plurality of vertically spaced openings **110** located in faces of the uprights **106, 108** that face inward towards the walkway, e.g. towards the opposed upright **106, 108**. The openings **110** allow for vertically operably securing the breakaway chain **104** at a desired vertical location relative to the floor upon which people will walk.

With additional reference to FIG. 2, in this example, the breakaway chain **104** is operably secured to the uprights **106, 108** with hook members **112, 114**. Each hook member **112, 114** has a hook portion **116, 118**, that passes through an opening **120, 122** in a corresponding chain link **141, 143** of the breakaway chain **104**. Thus, the breakaway chain **104** extends laterally between the opposed uprights **106, 108** to block the walkway **102** therebetween.

With reference to FIG. 3, a cross-sectional enlarged illustration of an exemplary hook member **112** is illustrated mounted to upright **106**. Other hook members are contemplated.

In this example, the hook member **112** includes a main body **124**. Hook portion **116** extends laterally outward from the main body **124** and away from upright **106**, when mounted.

In this example, the main body **124** is positioned, at least in part, on a first side **125** of the upright **106**. The first side **125** faces the opposed upright **108** and the walkway in use.

A plurality of legs **126-129** extend rearward from the main body **124**. The legs extend through openings **110** in the upright **106**.

In this example, leg **126** includes first and second angled portions **130, 131**. Angled portion **130** extend rearward from main body **124** at a first angle. The second angle portion **131** extends from an end of the first angled portion **130** back towards a second surface **132** of the upright **106** opposite the first side **125**.

A distal end of the second angle portion **131**, which provides a distal end of the leg **126**, contacts second side **132**, when installed.

The first angled portion includes a rib **134** that projects away from the second side **132**.

Legs **127** and **128** are similar to one another and are hook shaped. Each leg **127, 128** includes a first portion **136** extending rearward from the main body **124** and a second portion **138** that extends transverse to first portion **136**. In this example, the second portion **138** extends downward. These legs **127, 128** help prevent the hook member **112** from being pulled out of the upright **106** by lateral force illustrated by arrow **139**.

Leg **129** is an angled portion that extends rearward from the main body **124**.

The first and second sides **125, 132** in this example are provided as opposed surfaces of a wall portion of the upright **106**. The openings **110** extend through the wall portion and through the first and second sides **125, 132**.

Flanges **140, 142** extend from the main body **124**. Flange **140** has a constant thickness while flange **142** includes an increased thickness region **144**. There is a tapered region **146** proximate the increased thickness region **144** and that is interposed between the main body **124** and the increased thickness region **144**.

Flanges **140, 142** are at opposite ends of the main body **124** and extend outward from the main body away from one another.

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A distal end of flange **142** includes a forward extending foot **148**. More particularly, when mounted, the foot **148** extends from flange **142** away from the upright **106**.

In this example, with reference to FIGS. 1 and 2, the breakaway chain **104** includes first and second chain portions **150, 152** and a breakaway connector **154**. The breakaway chain portions **150, 152** could be formed from plastic or metal or any other suitable material.

The breakaway connector **154** connects the first and second chain portions **150, 152** together while opposite ends of the first and second chain portions **150, 152** are attached to the uprights **106, 108** by the hook members **112, 114**.

FIG. 6 illustrates one link **141** of chain portion **150** and one link **143** of chain portion **152** as well as the breakaway connector **154** in cross-section.

The breakaway connector **154** includes a first opening **156** and a second opening **158**. When assembled, as illustrated in FIG. 7, one link **141** of the first chain portion **150** is received in the first opening **156** and one link **143** of the second chain portion **152** is received in the second opening **158**. The breakaway connector is configured to grip the links **141, 143** to secure the two chain portions **150, 152** together.

In this example, the first opening **156** is formed between first and second wall portions **160, 161**. The second opening **158** is formed between third and fourth wall portions **162, 163**.

The breakaway connector **154** includes a plurality of flexible gripping members for engaging corresponding links **141, 143** of the chain portions **150, 152**.

In this example, a plurality of first gripping members **164** extend from the first wall portion **160** toward the second wall portion **161**. Additionally, the first gripping members **164** extend away from the mouth **165** of the first opening **156**. The first gripping members **164** extend toward the second opening **158**. The first gripping members **164** extend from the first wall portion **160** in an angled manner.

A plurality of second gripping members **166** extend from the third wall portion **162** toward the fourth wall portion **163**. In this example, the second gripping members **166** extend towards the first gripping members **164** and the first gripping members **164** extend toward the second gripping members **166**. Additionally, the second gripping members **166** extend away from the mouth **167** of the second opening **158**. The second gripping members **166** extend toward the first opening **156**. The second gripping members **166** extend from the third wall portion **162** in an angled manner.

The mouth **167** of the second opening, in this example, opens in an opposite direction as mouth **165**.

A plurality of third gripping members **168** extend from the second wall portion **161** toward the first wall portion **160**. In this example, the third gripping members **168** extend toward the second gripping members **166** and the second gripping members **166** extend toward the third gripping members **168**. Additionally, the third gripping members **168** extend away from the mouth **165** of the first opening **156**. The third gripping members **168** extend from the second wall portion **161** in an angled manner.

A plurality of fourth gripping members **170** extend from the fourth wall portion **163** toward the third wall portion **162**. In this example, the fourth gripping members **170** extend toward the first and third gripping members **164, 168** and the first and third gripping members **164, 168** extend toward the fourth gripping members **170**. The fourth gripping members **170** extend away from the mouth **167** of the second opening **158**. The fourth gripping members **170** extend from the fourth wall portion **163** in an angled manner.

While a plurality of gripping members **164, 166, 168, 170** are illustrated, in other examples, fewer or a greater number of gripping members can be provided. Further, both the first and third gripping members **164, 170** need not be provided in the first opening **156** in some embodiments. Both the second and fourth gripping members **166, 170** need not be provided in the second opening **158** in some embodiments. While two of each gripping member are illustrated fewer or a greater number of each gripping member could be provided.

With reference to FIG. 6, the first gripping members **164** are axially offset from the third gripping members **168** such that the first and third gripping members **164, 168** are axially staggered along an axis **172** that extends through the mouths **165, 167** of the first and second openings **156, 158**, respectively. In this example, one of the first gripping members **164** is positioned between a pair of adjacent third gripping members **168**. Similarly, one of the third gripping members **168** is positioned between a pair of adjacent first gripping members **164**.

The second and fourth gripping members **166, 170** are similarly axially offset as the first and third gripping members **164, 168**.

In FIG. 6, the breakaway connector **154** and particularly the gripping members **164, 166, 168, 170** are illustrated in a relaxed state.

The first and second wall portions **160, 161** are axially spaced a first distance **D1** in the relaxed state. In this example, the first gripping members **164** extend axially away from the first wall portion **160** a second distance **D2** that is less than **D1**. In a preferred example, distance **D2** is at least half of the distance **D1**. Similarly, the third gripping members **168** extend axially away from the second wall portion **161** a third distance **D3** that is less than **D1**. In a preferred example, distance **D3** is at least half the distance **D1**. Further, in an even more preferred example, the distance **D2** is equal to the distance **D3**.

In the example where **D2** and **D3** are greater than half the distance **D1**, the first and third gripping members **164, 168** axially overlap along a second axis that is perpendicular to axis **172**.

In one example, the second and fourth gripping members **166, 170** are similarly dimensioned as the first and third gripping members **164, 168**.

In this example, the first and third wall portions **160, 162** are generally coplanar, aligned in a back-to-back orientation, and are part of a same bigger wall portion. Similarly, the second and fourth wall portions **161, 163** are generally coplanar, aligned in a back-to-back orientation, and are part of a same bigger wall portion.

A fifth wall portion **180** is transverse to the first, second, third, and fourth wall portions **160-163** and separates the first opening **156** from the second opening **158**. The first, second, third, fourth, and fifth wall portions **160-163** and **180** generally form an H-shaped profile.

In this example, the first-fifth wall portions **160-163** and **180** are formed from a single continuous piece of material.

Further, in this example, the first, second, third, fourth, and fifth wall portions **160-163, 180** as well as the first, second, third and fourth gripping members **164, 166, 168, 170** are all formed from a single continuous piece of material.

The distal ends of the first, second, third, and fourth wall portions **160-163** in this example are curved axially inward. More particularly, the distal end of first wall portion **160** is curved inward towards the second wall portion **161**. In this example, the curved portion extends towards the second

wall portion **161** a lesser distance than **D2**. The distal end of the second wall portion **161** is curved inwards towards the first wall portion **160**. In this example, the curved portion extends towards the first wall portion **160** a lesser distance than **D3**. The distal end of the third wall portion **162** is curved inwards towards the fourth wall portion **163**. In this example, the curved portion extends towards the fourth wall portion **163** a lesser distance than **D1**. The distal end of the fourth wall portion is curved inwards towards the third wall portion **162**. In this example, the curved portion extends towards the third wall portion **162** a lesser distance than **D3**.

The curved end portions define the mouths **165, 167**. In this example, the distance between the curved ends of the first and second wall portions is greater than distances **D2** and **D3**, but less than the distance **D1**.

In one example, the distance between the curved ends of the third and fourth wall portions is the same as the distance between curved ends of the first and second wall portions such that the size of the mouths **165, 167** is the same.

The breakaway connector **154** can be formed by extruding the continuous piece of material, injection molding or other manufacturing methods. Preferably, the breakaway connector is formed from a resilient flexible plastic material.

The angled orientation of the gripping members **164, 166, 168, 170** allows for easy insertion of the corresponding chain links **141, 143** during assembly.

FIG. 7 illustrates a simplified/schematic side view of the breakaway connector **154** engaging links **141, 143** of the first and second chain portions **150, 152**. In this example, it appears that the gripping members **164, 166, 168, 170** and curved ends of the first, second, third, and fourth wall portions extend into and pierce the chain links **141, 143** inserted into the corresponding openings **156, 158**. However, in practice, this would not occur or not occur to such an extent.

As illustrated in FIG. 7, the gripping members have been flexibly bent due to insertion of the chain links **141, 143**. More particularly, the first and third gripping members **164, 168** have been bent towards the second opening **158** and the fifth wall portion **180**. Likewise, the second and fourth gripping members **166, 170** have been bent towards the second first opening **156** and the fifth wall portion **180**.

Further, the first gripping members **164** have been bent back towards the first wall portion **160** from which they extend. The second gripping members **166** have been bent back towards the third wall portion **162** from which they extend. The third gripping members **168** have been bent back towards the second wall portion **161** from which they extend. The fourth gripping members **170** have been bent back towards the fourth wall portion **163** from which they extend.

As such, when the chain links **141, 143** are installed in the openings **156, 158**, the tips of the gripping members **164, 166, 168, 170** are closer to the corresponding wall portions **160-163** from which the gripping members **164, 166, 168, 170** extend than when the chain links **141, 143** are removed and the breakaway connector **154** is in a relaxed state.

While illustrated as being unbent, one or both of the first and second wall portions **160, 161** would also typically be bent. This is due to the fact that the mouth **165** is smaller in dimension than the thickness **T1** of the corresponding chain link **141** of chain portion **150**. Similarly, one or both of the third and fourth wall portions **162, 163** would also typically be bent. This is due to the fact that the mouth **167** is smaller in dimension than the thickness **T2** of the corresponding chain link **143** of chain portion **152**.

In one example, breakaway connector **154** is resilient such that if the chain links **141**, **143** are removed the portions that are bent will return to their previously relaxed and unbent conditions.

In one example, the gripping between the chain links **141**, **143** and the breakaway connector **154** is less than or equal to 5 pounds such that 5 pounds of tension applied to the assembly will cause at least one of the links to be removed from the breakaway connector **154**.

While the angled orientation of the gripping members **164**, **166**, **168**, **170** assists in insertion of the chain links **141**, **143**, preferably, they resist removal of the chain links. As such, in some embodiments, it takes more force to remove the chain links **141**, **143** from the breakaway connector **154** than to insert the chain links **141**, **143** into the openings **156**, **158**.

As illustrated in FIG. 7, when the chain links **141**, **143** are installed in the breakaway connector **154**, the links **141**, **143** extend axially out of the mouths **165**, **167** of the corresponding openings **156**, **158**. The chain links **141**, **143** extend out of the breakaway connector **154** in opposite directions.

With reference to FIG. 8, the width **W1** of the breakaway connector **154** (and the openings **156**, **158** and mouths thereof **165**, **167**) is greater than or equal to the widths **W2**, **W3** of the chain links **141**, **143** of the first and second chain portions **150**, **152**.

Because, in some embodiments, the gripping members **164**, **166**, **168**, **170** are flexible, when the breakaway chain **104** is broken, e.g. a chain link **141**, **143** is removed from the breakaway connector **154**, the breakaway chain **104** can be reassembled. In other words, in some examples, the breakaway connector **154** is not a one-time use connector.

In the illustrated example, the chain links **141**, **143** slide axially into the breakaway connector **154** without latching the breakaway connector **154** to the chain links **141**, **143**.

All references, including publications, patent applications, and patents cited herein are hereby incorporated by reference to the same extent as if each reference were individually and specifically indicated to be incorporated by reference and were set forth in its entirety herein.

The use of the terms “a” and “an” and “the” and similar referents in the context of describing the invention (especially in the context of the following claims) is to be construed to cover both the singular and the plural, unless otherwise indicated herein or clearly contradicted by context. The terms “comprising,” “having,” “including,” and “containing” are to be construed as open-ended terms (i.e., meaning “including, but not limited to,”) unless otherwise noted. Recitation of ranges of values herein are merely intended to serve as a shorthand method of referring individually to each separate value falling within the range, unless otherwise indicated herein, and each separate value is incorporated into the specification as if it were individually recited herein. All methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of any and all examples, or exemplary language (e.g., “such as”) provided herein, is intended merely to better illuminate the invention and does not pose a limitation on the scope of the invention unless otherwise claimed. No language in the specification should be construed as indicating any non-claimed element as essential to the practice of the invention.

Preferred embodiments of this invention are described herein, including the best mode known to the inventors for carrying out the invention. Variations of those preferred embodiments may become apparent to those of ordinary skill in the art upon reading the foregoing description. The

inventors expect skilled artisans to employ such variations as appropriate, and the inventors intend for the invention to be practiced otherwise than as specifically described herein. Accordingly, this invention includes all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law. Moreover, any combination of the above-described elements in all possible variations thereof is encompassed by the invention unless otherwise indicated herein or otherwise clearly contradicted by context.

What is claimed is:

1. A breakaway chain comprising:

a breakaway connector including:

a first opening defined between a first wall portion and a second wall portion spaced away from the first wall portion;

a first flexible gripping member extending from the first wall portion towards the second wall portion;

a second opening between a third wall portion and a fourth wall portion spaced away from the third wall portion;

a second flexible gripping member extending from the third wall portion towards the fourth wall portion;

a first chain portion having a first chain link, the first chain link inserted into the first opening providing an engagement with the first flexible gripping member;

a second chain portion having a second chain link, the second chain link inserted into the second opening providing an engagement with the second flexible gripping member; and

wherein the engagement between the first chain link and the breakaway connector is not greater than 5 lbs. such that an application of a force greater than 5 lbs. will cause the first chain link to be removed from the breakaway connector.

2. A breakaway chain comprising:

a breakaway connector including:

a first opening defined between a first wall portion and a second wall portion spaced away from the first wall portion;

a first flexible gripping member extending from the first wall portion towards the second wall portion;

a second opening between a third wall portion and a fourth wall portion spaced away from the third wall portion;

a second flexible gripping member extending from the third wall portion towards the fourth wall portion;

a first chain portion having a first chain link, the first chain link inserted into the first opening providing an engagement with the first flexible gripping member;

a second chain portion having a second chain link, the second chain link inserted into the second opening providing an engagement with the second flexible gripping member; and

wherein:

the first flexible gripping member is one of a plurality of first flexible gripping members, each first flexible gripping member of the plurality of first gripping members extends from the first wall portion towards the second wall portion;

the second flexible gripping member is one of a plurality of second flexible gripping members, each second flexible gripping member of the plurality of second gripping members extends from the third wall portion towards the fourth wall portion;

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the plurality of first flexible gripping members are axially spaced apart in a direction extending towards the second opening; and
 the plurality of second flexible gripping members are axially spaced apart in a direction extending towards the first opening.

3. A breakaway chain comprising:
 a breakaway connector including:
 a first opening defined between a first wall portion and a second wall portion spaced away from the first wall portion;
 a first flexible gripping member extending from the first wall portion towards the second wall portion;
 a second opening between a third wall portion and a fourth wall portion spaced away from the third wall portion;
 a second flexible gripping member extending from the third wall portion towards the fourth wall portion;
 a first chain portion having a first chain link, the first chain link inserted into the first opening providing an engagement with the first flexible gripping member;
 a second chain portion having a second chain link, the second chain link inserted into the second opening providing an engagement with the second flexible gripping member; and
 wherein if either the first chain link or the second chain link is removed from the breakaway connector, the first chain link or the second chain link that is removed from the breakaway connector can be reinstalled into the corresponding first opening or second opening by axially sliding the first chain link or the second chain link into the corresponding first opening or second opening and without latching the first opening or the second opening to the breakaway connector.

4. A breakaway chain comprising:
 a breakaway connector including:
 a first opening defined between a first wall portion and a second wall portion spaced away from the first wall portion;
 a first flexible gripping member extending from the first wall portion towards the second wall portion;
 a second opening between a third wall portion and a fourth wall portion spaced away from the third wall portion;
 a second flexible gripping member extending from the third wall portion towards the fourth wall portion;
 a first chain portion having a first chain link, the first chain link inserted into the first opening providing an engagement with the first flexible gripping member;
 a second chain portion having a second chain link, the second chain link inserted into the second opening providing an engagement with the second flexible gripping member;
 wherein:
 the first flexible gripping member extends away from the first wall portion at an angle and away from a mouth of the first opening towards the second opening; and
 the second flexible gripping member extends away from the third wall portion at an angle and away from a mouth of the second opening towards the first opening.

5. A breakaway chain comprising:
 a breakaway connector including:
 a first opening defined between a first wall portion and a second wall portion spaced away from the first wall portion;

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a first flexible gripping member extending from the first wall portion towards the second wall portion;
 a second opening between a third wall portion and a fourth wall portion spaced away from the third wall portion;
 a second flexible gripping member extending from the third wall portion towards the fourth wall portion;
 a first chain portion having a first chain link, the first chain link inserted into the first opening providing an engagement with the first flexible gripping member;
 a second chain portion having a second chain link, the second chain link inserted into the second opening providing an engagement with the second flexible gripping member; and
 wherein:
 insertion of the first chain link into the first opening bends the first flexible gripping member towards the second opening and towards the first wall portion; and
 insertion of the second chain link into the second opening bends the second flexible gripping member towards the first opening and towards the third wall portion.

6. The breakaway chain of claim 5, wherein the first flexible gripping member is one of a plurality of first flexible gripping members, each first flexible gripping member of the plurality of first flexible gripping members extends from the first wall portion towards the second wall portion.

7. The breakaway chain of claim 5, wherein:
 the first chain link is inserted into the first opening through a first mouth of the first opening;
 the second chain link is inserted into the second opening through a second mouth of the second opening; and
 the first and second mouths facing away from one another.

8. The breakaway chain of claim 7, wherein:
 a portion of the first chain link extends out of the first opening in a first direction; and
 a portion of the second chain link extends out of the second opening in a second direction opposite the first direction.

9. The breakaway chain of claim 7, wherein the first mouth has a first width and the first chain link has a second width, the first width being equal to or greater than the second width.

10. The breakaway chain of claim 5, further comprising:
 a first hook member having a hook portion configured to extend through a loop of a link member of the first chain portion;
 a second hook member having a hook portion configured to extend through a loop of a link member of the second chain portion.

11. The breakaway chain of claim 10, wherein:
 the first hook member has a first mount for mounting the first hook member to an opening in a first upright member; and
 the second hook member has a second mount for mounting the second hook member to an opening in a second upright member.

12. The breakaway chain of claim 5, wherein:
 the first, second, third and fourth wall portions are unitarily formed in a single body;
 the first and third wall portions aligned in a back-to-back relationship;
 the second and fourth wall portions aligned in a back-to-back relationship;

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a fifth wall portion extends transverse between the first and second wall portions and extends transverse between the third and fourth wall portions.

13. The breakaway chain of claim 12, wherein the fifth wall portion separates the first opening from the second opening.

14. The breakaway chain of claim 13, wherein:

a free end of the first wall portion is curved towards the second wall portion;

a free end of the second wall portion is curved towards the first wall portion;

a free end of the third wall portion is curved towards the fourth wall portion; and

a free end of the fourth wall portion is curved towards the third wall portion.

15. The breakaway chain of claim 14, wherein:

the free end of the first wall portion extends towards the second wall portion to a lesser extent than the first flexible gripping member; and

the free end of the third wall portion extends towards the fourth wall portion to a lesser extent than the second flexible gripping member.

16. The breakaway chain of claim 5, wherein:

in a relaxed state, the first flexible gripping member extends from the first wall portion towards the second wall portion a first distance that is greater than a second distance between the first and second wall portions;

a third flexible gripping member extends from the second wall portion towards the first wall portion; and

in a relaxed state, the third flexible gripping member extends from the second wall portion towards the first wall portion a third distance that is greater than the second distance between the first and second wall portions.

17. A breakaway chain comprising:

a breakaway connector including:

a first opening defined between a first wall portion and a second wall portion spaced away from the first wall portion;

a first flexible gripping member extending from the first wall portion towards the second wall portion;

a second opening between a third wall portion and a fourth wall portion spaced away from the third wall portion;

a second flexible gripping member extending from the third wall portion towards the fourth wall portion;

a first chain portion having a first chain link, the first chain link inserted into the first opening providing an engagement with the first flexible gripping member;

a second chain portion having a second chain link, the second chain link inserted into the second opening providing an engagement with the second flexible gripping member;

wherein:

insertion of the first chain link into the first opening resiliently bends the first flexible gripping member towards the second opening and towards the first wall portion such that if the first chain link is removed from the first opening, the first flexible gripping member resiliently bends back towards the second wall portion; and

insertion of the second chain link into the second opening resiliently bends the second flexible gripping member towards the first opening and towards the third wall portion such that if the second chain link is removed from the second opening, the second

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flexible gripping member resiliently bends back towards the fourth wall portion.

18. A breakaway chain comprising:

a breakaway connector including:

a first opening defined between a first wall portion and a second wall portion spaced away from the first wall portion;

a first flexible gripping member extending from the first wall portion towards the second wall portion;

a second opening between a third wall portion and a fourth wall portion spaced away from the third wall portion;

a second flexible gripping member extending from the third wall portion towards the fourth wall portion;

a first chain portion having a first chain link, the first chain link inserted into the first opening providing an engagement with the first flexible gripping member;

a second chain portion having a second chain link, the second chain link inserted into the second opening providing an engagement with the second flexible gripping member;

wherein:

a third flexible gripping member extends from the second wall portion towards the first wall portion;

the third flexible gripping member is offset from the first flexible gripping member such that the third flexible gripping member is positioned axially closer to the second opening than the first flexible gripping member.

19. A blocking arrangement for a walkway within a retail establishment comprising:

a first upright member;

a second upright member spaced apart from the first upright member such that the first and second upright members are on opposite sides of the walkway;

a breakaway chain including:

a breakaway connector including:

a first opening defined between a first wall portion and a second wall portion spaced away from the first wall portion;

a first flexible gripping member extending from the first wall portion towards the second wall portion;

a second opening between a third wall portion and a fourth wall portion spaced away from the third wall portion;

a second flexible gripping member extending from the third wall portion towards the fourth wall portion;

a first chain portion having a first chain link, the first chain link inserted into the first opening providing an engagement with the first flexible gripping member; and

a second chain portion having a second chain link, the second chain link inserted into the second opening providing an engagement with the second flexible gripping member;

wherein:

the first chain portion has an end operably secured to the first upright member;

the second chain portion has an end operably secured to the second upright member; and

when the first chain portion is operably secured to the first upright member, the second chain portion is operably secured to the second upright member, and the breakaway connector is engaged with the first and second chain links, the breakaway chain blocks the walkway.

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20. The blocking arrangement of claim 19, further comprising:

a first hook member having a hook portion configured to extend through a loop of a link member of the first chain portion, the first hook member attached to the first upright member and securing the first chain portion to the first upright member; and

a second hook member having a hook portion configured to extend through a loop of a link member of the second chain portion, the second hook member attached to the second upright member and securing the second chain portion to the second upright member.

21. The blocking arrangement of claim 20, wherein:

the first hook member has a first mount for mounting the first hook member to an opening in the first upright member; and

the second hook member has a second mount for mounting the second hook member to an opening in the second upright member.

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22. The blocking arrangement of claim 21, wherein:

the first upright member has a plurality of vertically spaced openings, the opening in the first upright member being one of the plurality of vertically spaced openings; and

the second upright member has a plurality of vertically spaced openings, the opening in the second upright member being one of the plurality of vertically spaced openings.

23. The blocking arrangement of claim 19, wherein:

the engagement between the first chain link and the breakaway connector is less than an operable securement between the first upright member and the first chain portion; and

the engagement between the second chain link and the breakaway connector is less than an operable securement between the second upright member and the second chain portion.

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